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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,753	12/04/2003	Johann Meseth	TER-02P0020	7612

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EXAMINER	
GREENE, DANIEL LAWSON	
ART UNIT	PAPER NUMBER
3694	

MAIL DATE	DELIVERY MODE
04/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,753	MESETH, JOHANN	
	Examiner	Art Unit	
	DANIEL L. GREENE	3694	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the Appeal Brief filed on 11/14/2007, PROSECUTION IS HEREBY REOPENED, accordingly the Finality of the previous Office action mailed 6/14/2007 is hereby withdrawn. New grounds of rejection are set forth below.

2. To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

3. A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

4. The arguments contained within said appeal brief have been carefully reviewed and it appears applicant's arguments are directed towards the express direction of the opening of the beveled end of the condensation tube. It is considered that the previous combination of Krebs and Garabedian does not explicitly teach directing the outlet opening of the condensation tube towards the surface of the water within the suppression pool. Accordingly, the rejections set forth in sections 8 and 9 of the previous Office action mailed 6/14/2007 are hereby withdrawn.

5. However upon further consideration new rejections are made as set forth below in light of newly found references as well as a review of the teachings of references already of record.

6. Claims 1 and 3-5 are pending.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

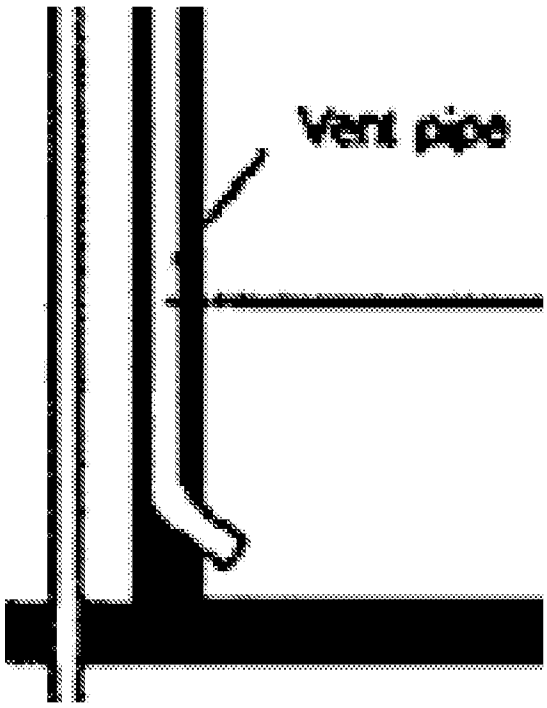
8. . Claims 1, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krebs Figure 4 in view of U.S. Patent 4,986,956 to Garabedian and further in view of any of German 2618108A1(IDS 9/17/2004), JP0000550319AA to Itoya et al., (IDS 9/17/2004) or U.S. Patents 4,304,198 to Stiefel, 4,801,424 to Schweiger, or 5,122,333 to Larsen.

Regarding claims 1 and 5, Krebs clearly discloses applicant's invention as claimed except for:

a. the specific geometry of the outlet nozzle, and

b. that the opening is directed towards the surface defining the horizontal.

KREBS



GARABEDIAN

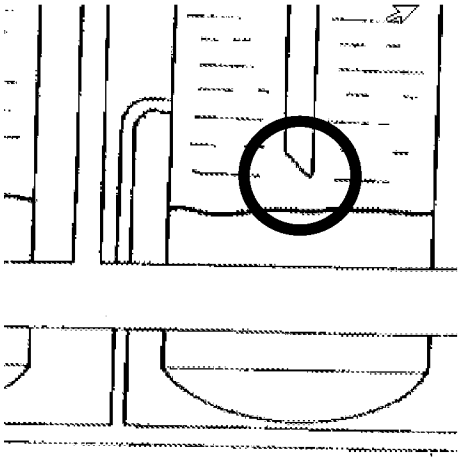


FIG. 6A

a. Garabedian column 6, lines 11-15 teach is it old and advantageous to cut the angle of the outlet nozzle at a 45 degree angle for the benefit of eliminating major hydrodynamic pressure disturbances due to a chugging type of steam condensation.

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the outlet nozzle of Krebs with a 45 degree angle thereby providing an outlet nozzle formed with a lower side longer than the upper side, for the benefit of eliminating major hydrodynamic pressure disturbances due to a

chugging type of steam condensation as shown to be old and advantageous by the teachings of Garabedian above.

Garabedian appears silent with regard to the orientation of the nozzle opening of the 45 degree angle (beveled end) with respect to the horizontal.

b. Resort may be had to any one of the following disclosures to show it is notoriously old and well known in the nuclear field for the openings of vent pipes within pressure suppression chambers to be directed towards the horizontal surface of the cooling liquid within said suppression chamber for the inherent benefits thereof, e.g. better mixing effect, loss of entropy during direction change, etc. Specifically see:

German 2618108A1

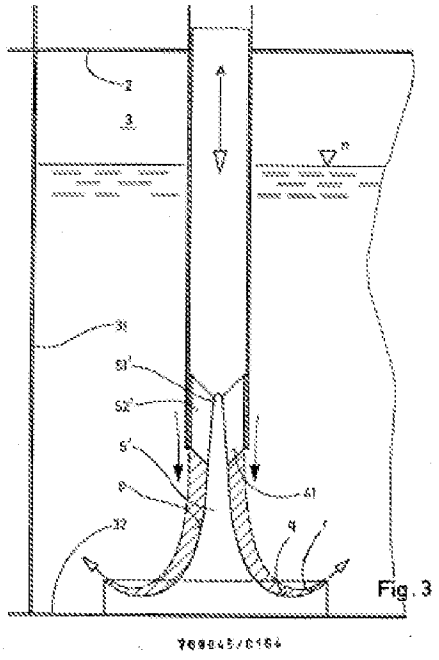
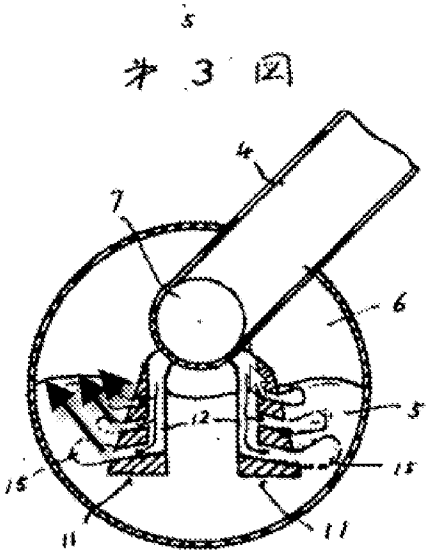


Fig. 3

Itoya



Schweiger

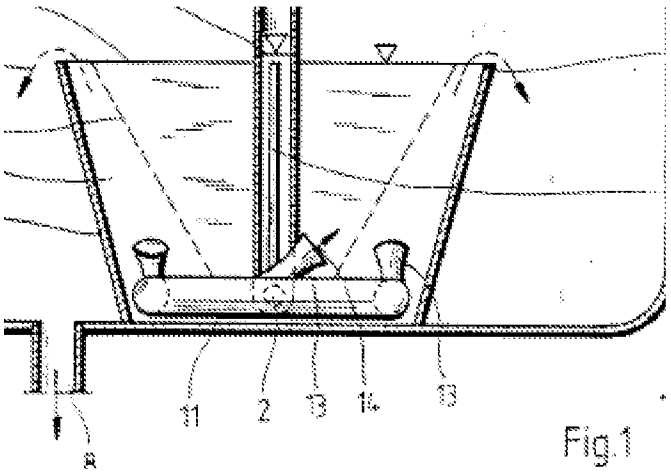
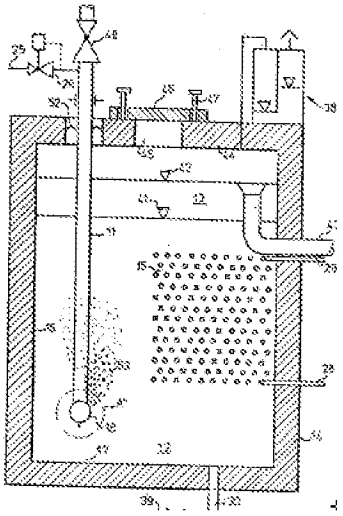


Fig.1

Stiefel, Fig. 2,



Stiefel, Fig. 3

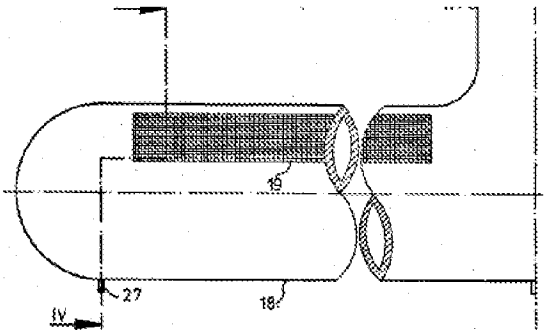
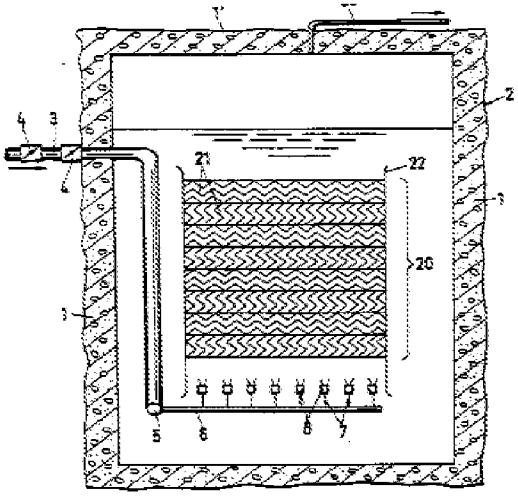
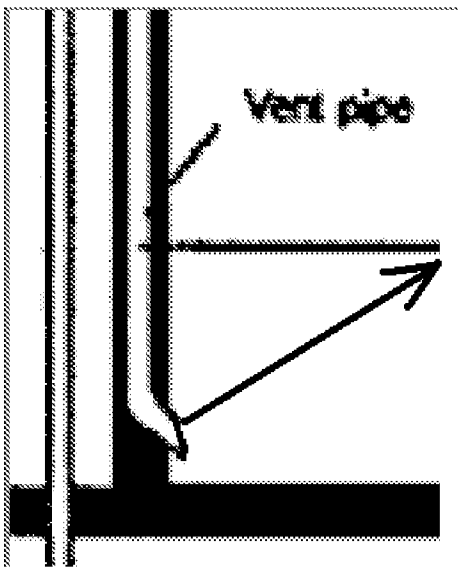


Fig. 3

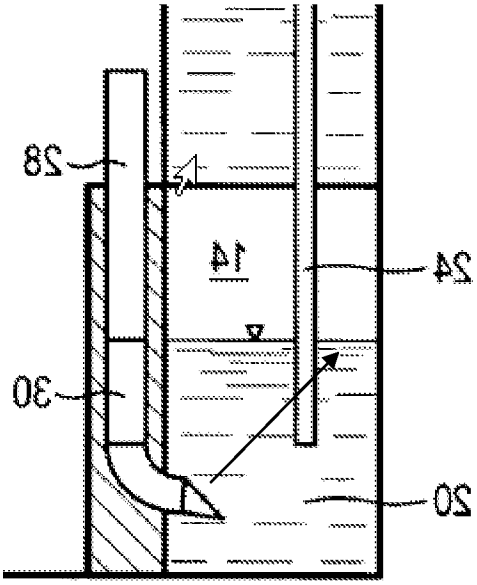
Larsen



KREBS AS MODIFIED



Mirror of Instant App. Fig. 1



As can be seen by the preceding pictorial, Krebs modified with the teachings of Garabedian (to include a 45 degree angled (beveled) end) as well as the teachings of ANY of the other references above would indeed lead one to find that directing the opening towards the surface defining the horizontal would be an obvious arrangement of said opening for the obvious benefits thereof, i.e. directing the flow of effluent in a desired direction while minimizing chugging effects.

9. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krebs Figure 4 in view of U.S. Patent 4,986,956 to Garabedian as applied to claims 1 and 5 above and further in view of either Introduction to Fluid Mechanics second edition to John et al. or Piping Handbook Seventh edition to Nayyer.

The combination of Krebs as set forth above discloses applicant's invention as claimed, however there is no express disclosure of the .specific angle of the elbow of the condensation tube.

Both John et al. (ppB.374, C.494 and C.495) and Nayyer (pp 174) teach it is old and advantageous to minimize the curvature of a pipe or elbow for the benefit of minimizing friction and subsequent losses in the flow of liquid in the system. John et al. and Nayyer disclose fundamentals behind standard fluid flow in pipes, systems, etc. that are considered to be basic knowledge to those in the nuclear containment art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the angle of the elbow of the combination of Krebs and Garabedian to those angles suggested in claims 3 and 4 for the benefits of decreasing the loss coefficient and minimizing pressure losses as taught to be old and advantageous by either John et al. or Nayyer.

Additionally one having ordinary skill in the art at the time the invention was made would have been motivated to vary the angle of the elbow of the combination of Krebs and Garabedian within the range suggested by claims 3 and 4 to achieve a desired result because there is well-settled case law explaining that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL L. GREENE whose telephone number is (571)272-6876. The examiner can normally be reached on Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James P. Trammell can be reached on (571) 272-6712. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. L. G./
Examiner, Art Unit 3694
2008-03-29

/James P Trammell/

Supervisory Patent Examiner, Art Unit 3694